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INFORMATION ON TWO USSR BOTANICAL CONFERENCES

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INFORMATION ON TWO USSR BOTANICAL CONFERENCES

[Following are the translations of two articles, titles below, on botanical conferences in the USSR published in Botanicheskiy zhurnal (Botanical Journal), Vol 45, No 12, Moscow-Leningrad, December 1960, pages 1819-1823 and 1828-1833 respectively.]

TABLE OF CONTENTS

CONFERENCE ON VEGETATION AND SOIL INVESTIGATION IN THE SOVIET FAR NORTH

[Following is the translation of an article by Ye. V. Dorogostayakaya in Botanicheskiy Zhurnal (Botanical Journal), Moscow, Vol 45, No 12, December 1960, pages 1819-1823.]

The Vegetation Laboratory of the Far Northern USSR Botanical Institute called a conference on 25-27 April 1960, in the Botanical Institute imeni V. L. Komarov (BIN) of the USSR Academy of Sciences (AN USSR), dealing with the problems of vegetation and soils investigation in the Far North.

Opening the conference, B. A. Tikhomirov (BIN) called attention to the great services performed by the late B. N. Gorodkov in studying the processes of nature on the northern borders of our Motherland. The founder of Soviet tundra knowledge, B. N. Gorodkov was both a theoretician and a practicioner with an extremely varied approach to the tundra, a botanist, a physical geographer, a soil scientist, and an animal ecologist. Long ago, Gorodkov pointed out the necessity of making a complex study of tundra biogeocenozoics, i.e., of developing that trend which has now become a component part of tundra knowledge. Gorodkov first conceived the work which was carried out, and is being carried out, by his students and followers. It would be difficult to name any branch of Soviet knowledge on the tundra which has not been touched by the work of Gorodkov, which is also widely known abroad. The Conference, which was held in theBIN, was devoted to accomplishing a great deal of work, and this was entirely in accord with the spirit of the great toiler for Soviet tundra knowledge, B. N. Gorodkov.

The workers of the Botanical Institute of the AN USSR, the soil scientists of the Soil Institute of the AN USSR (Moscow), the Soil Museum of the AN USSR (Leningrad), and the Arctic Institute (Leningrad), the workers of the Polar-Alpine Botanical Gardens of the AN USSR (Kirovsk), the Pedagogic Institute imeni V. I. Lenin (Moscow), the VILAR (Moscow), the Komi Affiliate of the AN USSR, and others, took an active part in the Conference. The following types of reports were given: (1) floristic, (2) soil biology, (3) botanical-geographical and geobotanical, (4) biological-ecological, and (5) zoological.

O. I. Kyzeneva (Kirovsk, Polar-Alpine Botanical Garden of the AN USSR) made a report on "Work on Flora Murmanskoy Oblasti (Flora of Murmanskaya Oblast)." Herbarium has been collected throughout the oblast since the opening of the Botanical Garden, but the idea of drawing up Flora arose only after the great Patriotic War. B. N. Gorodkov took an active part in work on Flora, editing it himself and pointing out the necessity of isolating the ecological forms in

Flora according to the Raunkner system, etc. He then turned over the editing work to A. I. Poyarkovaya, but continued to give helpful advice up until his death.

Up to the present time, four issues of Flora have been published (759 types of vascular plants) with many illustrations and maps; the fifth issue will be published in the first quarter of 1962.

T. G. Derviz-Sokolova (Moscow, Pedagogic Institute imeni V. I. Lenin) reported on "Certain Floristic Finds in the Extreme Eastern Section of the Chukotsk Peninsula." She carried out floristic research on the eastern Chukotsk sea coast for two seasons, reporting only upon her most interesting finds. She discovered four species which are new to USSR flora (Anemone multiceps (Greene) Standley, Paver walpolei Porsild, P. Macouni Green, Saussurea viscida Hult). All of these were "Bering" species, i.e., those which are found along the Bering Straits, or not far from them. In addition to that, she found two species from the Siberian forest -- Linnaea borealis L. and Rhododendron parvifolium Adams.

A. I. Tolmachev (Leningrad, University imeni A. A. Zhdanov), in his report "Certain Little-Known Plants of Arctic Flora and Their Occurrence," commented on the work which he has done for Flora Arktiki (Arctic Flora) in defining more accurately the systematic position and geographic distribution of the following species: Ranunculus grayi Britt. and Draba augustinowiczii Tolm., and the varieties Ranunculus hyperboreus Rottb. var. tricrentatus Rupr. and Crepis multicaulis Ldb. ssp. subintegrifolia Tolm. et Rebr. and Crepis multicaulis Ldb.

Soil scientists followed with their reports, after those dealing with flora were completed.

I. S. Mikhaylov (Leningrad, Scientific-Research Institute on the Arctic and Antarctic) reporting on "Some Peculiarities of Soil Deposits in the uppermost Arctic regions and the Role of B. N. Gorodkov in Their Study," pointed out that Gorodkov was a pioneer in Arctic soil research, whose services are recognized both here and abroad. Gorodkov correctly interpreted the soil-formation processes in the far northern regions of the USSR.

The studies made by I. S. Mikhaylov confirmed the ideas of Gorodkov regarding the singularity of soil in the polar wastes, which develops primarily under negative air temperatures. Transferrence of moisture in a border phase to zones with the lowest temperatures plays an important role in the migration processes of elements within a section of soil. The slowness of biochemical reactions, as compared to chemical reactions, points to the fact that the organic, acid products which have been formed are neutralized by the cations, which have been drawn up with moisture from the border phase. Soil in the polar wastes is distributed along the extreme polar sections of dry land which are not frozen, in the northern and southern hemispheres.

N. A. Karavayeva and V. O. Targul'yan (Moscow, Soil Institute of the AN USSR), in their report "Study of Frozen Tundra Soil in Northern Yakutia," characterized two varieties of soil in the flat tundra along the lower Lena: frozen, gley soil in loam, and humus, non-gleyey soil in slightly-rocky beds. Frozen retinization of the humus (from Latin retineo -- to retain) is characteristic of the former, as a result of the close stratification in the level which is always frozen. This retinization process consists of retention of the descending streams of soluble, humus substances by the water-resistant frozen level; as a result of this, an organic substance is accumulated in the soil section and is conserved under the conditions of anaerobiosis and low temperatures. In contrast to the soil in the eastern European tundra with fulvo-acidic humus, humic acids play an important role in the humus composition of these soils. Soils in slightly-rocky beds have an unusual hydrothermic form and are characterized by a thick humus level and by the absence of gleying. They are similar to the soils in slightly-rocky beds in the eastern European tundras.

Ye. M. Karlov and I. V. Ignatenko (Leningrad, Central Soil Museum of the AN USSR) presented a "Preliminary Report on Soil Research in the Bol'shezemel' and Kanin Tundras," which characterized the soils in these rayons.

In the Kanin tundra, the absence of constant freezing and the slight mechanical composition of the soil-forming rocks have caused the formation of a soil deposit similar to podzolic and marshy soils. The slight formation of alluvial levels is characteristic of podzolic soils, while gleyey processes are characteristic of marshy soils.

Podzols are distributed in a complex with podzolic-marshy and marshy soils in the eastern section of the Bol'shezemel' forest tundra over rocks with a slight mechanical composition. The degree of soil podzolity greatly decreases in the northern sections. In the southern section of the Bol'shezmel' tundra, soils are made up of complexes of gleyey surface, stagnant, and marshy varieties, which are often opodzolic and lixiviated. Sharply-defined gleying of the upper levels, strong acidity, low humus formation, and high humus mobility are characteristic of these soils. New formations of organic derivation are encountered at considerable depths (100-200 cm). In the Arctic tundra zone (coast of the Kara Sea, around Vaigach) the soils differ greatly from those of the southern tundra in that they have poorly-defined complexity, neutral or slightly-acidic reactions. Gleyey-turf soils have been formed on leveled sections, peat mosses in depressions, polygonaceous soils have developed in patches, and structural soils on sandy rocks.

B. A. Tikhomirov (BIN) in the report, "Effect of Vegetation on Summer Soil Erosion Based on Observations Made in Central Taimir," described his observations on the melting periods of snow and soil erosion with different vegetation and on different micro-topographic elements in the Taimir tundra. It was found that disappearance of

the snow and considerable soil erosion often took place long before positive air temperatures occurred. The rate and depth of erosion fluctuated in relation to the micro-climatic seasonal conditions (maximum erosion of 70 cm). There was an inverse relationship between the micro-topographical elements and the depth of summer erosion. Vegetation complexity was a cause of uneven surface contours among frozen rocks which were very old (pepetual congealment). The roots of Arctic plants are located in soil strata which thaw out every year; the occurrence of live roots in frozen soil strata can be explained by their presence there in years of deep erosion.

V. D. Aleksandrova, N. A. Karavayeva, I. S. Mikhaylov, V. O. Targul'yan, A. V. Baranovskaya, A. I. Marchenko and others then discussed the reports by the soil scientists. All of them noted with satisfaction that the gap between the work of botanists and soil scientists in the Arctic had finally been bridged. It was felt that the present Conference, which was the first conference of soil scientists, and botanists, in the Far North ever to be held, was of great importance for further study of the tundra zone. They felt it was necessary to organize collaborative research between the soil scientists and the botanists, and that the first steps in this direction had already been taken by researchers in northern Yakutia.

During the course of the many questions and answers which were debated, some discussion was centered on the problem of different tundra and marshy soils which display considerable differences in their formation and in their properties; by taking these differences into account, it was felt that it would be possible in the future to avoid lumping these two soil varieties together, which several botanists have tended to do.

The soil scientists pointed out the very great importance of the cryogenic migration (freezing) processes of solutions during soil formation in the Arctic. They defined the principal differences between the soils and their formation processes in tundra wastes and in polar wastes. A knowledge of these differences is of considerable help to the botanist in studying vegetation in these zones. The unresolved question of podzolic soils existing in the tundra was raised, with part of the soil scientists maintaining that podzol formation was possible in the tundra.

V. A. Gavrilyuk (BIN) reported on "The Fruiting and Seed Productivity of Certain Plants in Southeast Chukotsk." In spite of the great importance of vegetative propagation and its widespread dissemination under extreme conditions, the reproductive process is still of decisive importance in the evolution and dissemination of varieties. Gavrilyuk commented on the observations which he had made over a period of time on the fruiting and seed productivity of Chukotsk plants, dividing them into groups according to the fruiting period, the number of seeds which are formed, germinating ability, and the methods by which they are disseminated. The germination of seeds from arctic plants without preliminary freezing

and at quite high temperatures caused a great deal of interest. On the other hand, in a majority of arctic plants the length of the fruiting period is a factor which limits considerably the plant growth in high latitudes.

V. V. Vikhireva-Vasil'kova (BIN) reported on "Biological Characteristics of Certain V rieties of Cruciferae Found Around the Port of Tiks." She studied the biology and anatomical structure of vegetative organs Parrya nudicaulis (L.) Rgl. Erysimum pallasii (Pursh) Fernald, Cocklearia groenlandica L., Draba macrocarpa Adams.

As a result, the morphology characteristics of the underground and above-ground organs of these plants, the formative cycle of separate monocarpic sprouts, and the formation and location of buds were clarified. Y Parrya is capable of vegetative reproduction by means of root, offshoot formations. The stems and roots of the varieties which were studied were characterized by a large amount of parenchyma, a well-developed pariderm, and air cavities in the roots. The leaves were of mesophylic structure.

V. F. Shamurin (BIN) reported on "The Concept of "Aspect" and the Aspect Changes in Tundra Phytocenozoics," in which he defined more accurately the concept of "aspect." He distinguished between the sinuate aspects, which are understood to include the external form of phytocenozoic, which depends on the change of seasonal (time) sinuosity in the cenozpic, and phenological aspects, occurring in the external form of phytocenozoic, which depend on the interchange of the phenological phases in all plant aggregates which are phytocenozoic over the period of a year. By utilizing the data derived from three years' observations in the area around Tiks, Shamurin discovered the presence of regular changes, which were repeated from year to year, in the sinuate aspects of certain tundra groupings, and also set forth data which were characteristic of yearly (fluctuating) changes in the development of tundra cenozoic.

After the reports, dealing with biology of arctic plants, had been given, many questions were asked, mainly methodological, indicating the great interest which exists in knowledge about the tundra.

V. D. Aleksandrova (BIN), in her report "Polar Wastes on the Island of Zemlya Aleksandry (Alexandra Land)," described the results of the studies which she made in 1959 on the flora and vegetation on one of the islands in the Frants Iosif (Franz Joseph) archipelago. The extreme scarcity of flora (22 flowering varieties in all) and the poor vegetation are due, not only to the severe conditions on this small section of land (where 74% of the surface is covered with ice), but also due to its geological youth (6600-4900 years according to data by V. D. Dibner). A considerable part of the island which is free from ice is twice as young as the bench. Several geo-botanical descriptions have made it possible to clarify to a certain extent the successive stages of vegetation formation, which takes place extremely slowly here. Adetailed study of the underground and

above-ground structure of the most mature vegetations has made it possible to present a more accurate representation of the polar wastes and the zonal vegetation species, to which the author attributed the following characteristics: (1) flora composition which is typically Arctic; (2) predominance of pillow-like and turf-like forms of growth; (3) reduction of stratification; (4) predominant role of sinuosity of lichen deposits; and (5) a special type of soil formation with the characteristic "nidus quality" in the humus level.

V. B. Kuvayev (Moscow, VILAR) presented a report titled "Delineation of the Zone of Cold Rocky Wastes in the Mountains of Northern Eurasia." The author felt that, when delineating the vegetations zones in the mountains, one should not ignore the zone of rocky, alluvial deposits, since in the upper parts of the mountains these alluvial deposits are conditioned by the climate and are the prevalent types of deposits. Flowering vegetation is sparse here, while laminated lichens are of special importance. According to B. N. Gorodkov and Scandinavian botanists, the upper levels of the mountains covered primarily with rocky, alluvial deposits should be included in the special zone of "cold rocky wastes." On the basis of flora composition, biology and growing rhythm of the plants, this zone is similar to the zone of polar wastes in the Arctic and Antarctic. The author supported his conclusions with data on plant distribution at high altitudes, on the change in the relationship between different flora vitae at different heights, etc., in the polar section of the Urals, in the Khibini Mountains, and in the Western Verkhoyansk.

B. A. Yurtsev (BIN) reported on the "Botanical-Geographic Division into Rayons of the Verkhoyansk Mountain Chain," in which he presented the preliminary results which he has obtained. He has proposed nine provincial divisions. The principle underlying the division into rayons was that of flora distribution. Division into rayons was made on the basis of the following: (1) vertical zoning - separating mountainous tundra rayons from forest tundra rayons; (2) differences between forest vegetation in the western and eastern sides of the mountain chain; (3) occurrence of the zonal characteristics of adjoining plains and foothills in the forest vegetation of the mountain chain; (4) changes in the relationship between Arctic and mountanous components of flora in the tundra section of the mountain chain, extending from south to North. The author characterized the main zones which he delineated: (a) the zone of leaf-bearing, sparsely-populated trees of Larix dahurica Turca. in the mountainous North Siberian forest; (b) the transitional zone, and (c) the mountainous tundra zone with three sub-zones.

B. N. Norin (BIN) presented a report on the "Problem of Forest Tundra and Prospects for Further Study on its Vegetation." The author considered forest tundra to be a special zone, defining its southern border as the location where sparse growths of trees stopped taking up the greatest amount of ground, and its northern border

as extending along a line connecting the most northerly, forested islands (thus, a large expanse of scrub tundra is included in this zone). The basic type of vegetation in this zone is considered by him to be sparsely-populated, northern trees; the leaf-bearing, sparse growths of trees in eastern Siberia he includes in this classification, with the zone border extending far to the south. The author classifies autochthonous forest tundra as eastern Siberian, and young forest tundra which is still growing as European. Vegetation is classified as Norin on the following bases: (a) the collection of living forms; (b) flora composition; and (c) structure of the groupings. In the forest tundra, the latter basis is particularly important and requires careful investigation, since the vegetation here is extremely complex.

The author set forth the principles underlying the work to be carried out at the forest tundra research station which was built this year close to the town of Vorkuta, on the Sivaya Maska Severo-Pechorskaya railroad. The dynamics of forest boundaries, classification of forest tundra vegetation, its biological productivity, structure of vegetation groupings, etc., will be studied at the research station.

V. V. Petrovskiy (BIN), in "Complexity of Vegetation in the Tundra and in the Forest Tundra," discussed the reasons for vegetation complexity in the north and the delineation of complex combinations in nature. In the author's opinion, delineation of biogeocenozoic limits is of the greatest importance in determining the borders of complex groupings in the tundra. The author includes a section with monotypic micro-complexity and uniform nano-relief, which is determined by dynamic, cryogenic processes in the ground, within a single biogeocenozoic, while these processes extend throughout an entire section of biogencenozoic. The extremely small amounts of elementary groupings (micro-complex elements) causes their immediate inter-action upon each other, which occurs particularly in root systems of adjoining plants and extends throughout the entire area of these groupings. This provides a basis for assuming that these elementary groupings, which have adapted to different nano-relief elements but actually differ from each other ecologically, are component parts of one complex grouping. The following individuals entered into discussions on the botanical-geographical reports: B. A. Yurtsev, K. N. Igoshina, A. I. Tolmachev, Ye. M. Lavrenko, B. A. Tikhomirov, I. Kh. Blyumental', V. D. Aleksandrova, V. B. Sochava, and others. The principles underlying the delineation of B. N. Gorodkov's polar-wastes zone, V. B. Kuvayev's zone of "cold rocky wastes," and B. A. Yurtsev's "transitional" zone of Verkhoyansk underwent prolonged discussion.

In commenting upon Kuvayev's report, B. A. Yurtsev expressed his opinion that, in order to draw an analogy between altitudinal and latitudinal zonality of vegetation, it would be necessary if possible to observe "other similar conditions." Therefore, in deline-

ating altitudinal zones it would be better to select vegetation growing on rocky plateaus, and not on the slopes. It is possible that the "cold rocky waste" of Kuvayev is only the initial formational stage of mountain vegetation which has just recently emerged from under a glacier, having been delayed due to the severity of the climate. K. N. Igoshina noted that, in delineating altitudinal zonality, one must clearly define the climatic and geological factors. Sometimes the lack of very fine soil impedes the growth of varieties which could grow in that location climactically, and, on the other hand, V. D. Aleksandrova felt that the delineation which is made by soil scientists of a special type of soil formation in a polar waste region is one, very conclusive argument for delineation of this region into a special botanical-geographic zone. V. B. Kurvayev and K. N. Igoshina opposed the delineation of forest tundra into a botanical-geographic zone; V. D. Aleksandrova, Ye. M. Lavrenko, V. B. Sochava, and others, while not objecting in principle, pointed out that B. N. Norin still did not have sufficient data to warrant such a delineation. F. Ya. Levina expressed her opinion as to the prematurity of introducing changes into established botanical terminology, particularly the changes proposed by V. V. Petrov. Ye. M. Lavrenko and V. D. Aleksandrova stated that classification of "forest tundra," as well as classification of separate tundra groupings, was still very difficult to make, due to the difficulty of delineating plant edifiers in the tundra. The emphasis on biology in work carried out by tundra scientists should simplify this task, especially if it becomes an ecological-biological task.

In the zoological portion of the Conference program, V. I. Kapitonov (Syktyvkav, Kovni Affiliate of the AN USSR) presented a very comprehensive report on "Inter-relationships of the Black Marmot (Marmota camtschatica Pallas) and Vegetation in Mountain Tundra," in which the author describes transgressions made by the marmots upon vegetation in tundra of the Kharaulakh mountain chain (Yakutya). These facts illustrate the necessity of a biogeocenological approach to tundra study.

As can be seen, many serious questions which were of great importance in tundra biogeocenology were discussed at the Conference. The conference recorded the work on soil and vegetation research in the far north, which had been carried out by collectives and by separate researchers on a high scientific level, and summed up the results of vegetation and soil research in the tundra in recent years. However, it is to be regretted that studies based on the practical aspect of B. N. Gorodkov's works, on which he always placed great importance, were not represented at the Conference. In particular, reports by Z. P. Savkinaya on "Regulating the Botanical Composition of River Meadows Downstream from the Yenisey River" and by G. I. Karev on "New Methods of Reindeer Breeding in The Far North" were not included in the Conference program.

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SECOND CONFERENCE OF THE UKRAINIAN BOTANICAL SOCIETY

[Following is the translation of an article by I. P. Belokon', A. I. Barbarich, and V. V. Osychnyuk, Botanicheskiy Zhurnal (Botanical Journal), Moscow, Vol 45, No 12, December 1960, pages 1828-1833.]

The Second Conference of the Ukrainian Botanical Society was held in Kiev from 27 February to 2 March 1960. The work which the Society had carried out during the period between the first and second conferences (1957-1960) was summed up, new officers were elected, and an outline of future work was drawn up.

Out of all the groups and divisions of the Society, 62 delegates were selected, with one delegate representing every ten Society members. There were 56 delegates and many guests at the Conference.

The first session of the Conference began 27 February, with an introductory speech by the Chairman of the Board and Presidium, D. K. Zerov. He presented an anlysis of historical events which took place in our country between the two conferences of the Society and which provided the main stimulus for improving work of the Ukrainian Botanical Society. He stated that the members of the Society, along with all Soviet people, wholeheartedly endorse the policies of the Party and actively strive to put the m into practice in the construction of a Communist society.

After the Presidium, the Secretariat, and the Credentials Commission for the Conference were selected, a report was made by the Society's Board of Directors regarding the activity of the Ukrainian Botanical Society between the first and second conferences (report by the Secretary of the Society, A. I. Barbarich). The author described the resolution of the 21st Party Congress dealing with rapid development of all branches of science and the accomplishment of important, theoretical research combined with actual practice, particularly in the field of biology, which would promote further scientific-technical progress, and would provide the necessary basis for development of agriculture and medicine. He stressed the fact that the scientific and scientific-technical societies play an important role in this respect, one of which is the Ukrainian Botanical Society, which is a branch of the All-Union Botanical Society. The role of voluntary societies and organizations in the life of our country will increase in the future.

The year which marked a turning point in the Society was 1957, when the first conference of the UBO (Ukrainian Botanical Society) was held, after which the activity of the Society increased very greatly.

There are now 22 divisions and groups within the Society.

The number of members has grown from 360 to 643 since the day the first conference was held, or in other words it has almost doubled. Out of this number, 500 are active members and 143 are corresponding members. Their geographical distribution is as follows: active members -- Kiev 176; Khar'kov -- 78; Dnepropetrovks -- 49; L'vov -- 45; Odessa -- 37; Chernovitsy -- 19; Cherkassy -- 14; Belaya Tserkov -- 13; Uzhgorod -- 12; Zhitomir -- 12; Simferopol -- 9; Kherson -- 9; Kremenets -- 6; Krovoy Rog -- 6; Yalta -- 5; Uman' - 4; Melitopol' -- 4; Nezhin -- 4; Kamenets-Podol'skiy -- 4; Lugansk -- 2; Berdichev -- 1; Lubny -- 1; Corresponding members are as follows: Kiev -- 58; Chernovitsy -- 12; Khar'kov -- 10; Simferopol' -- 10; Dnepropetrovk -- 9; L'vov -- 9; Berdichev -- 9; Cherkassy -- 9; Uzhgorod -- 7; Belaya Tserkov' -- 4; Odessa -- 4; Kremenets -- 1; and Kherson -- 1; Kishinev -- 1.

It is interesting to note that it is expedient to have corresponding members, in addition to active members, in the Ukrainian Botanical Society. The corresponding members have no written work, but they are interested in botany and donate their services to assist the Society in its operation.

The Society feels that one of the main tasks confronting it is that of taking the necessary measures to improve the training of young scientific cadres in the various branches of botany. With this in mind, the Society discusses the reports of young botanists and assists them in carrying out scientific work.

Experience has shown that it is worthwhile to maintain young, beginning botanists in the Ukrainian Botanical Society as corresponding members. After a short period of time, 17 corresponding members, who had demonstrated their interest by appearing at meetings with reports and who published their first scientific works, were elected as active members of the Society. Five of them started post-graduate work; three were preparing dissertations, by-passing an aspirant degree; and three were working on dissertations.

This growth in young cadres is characteristic not only for Kiev (where 10 corresponding members were selected as active members), but also for other cities: Cherkass (four), Chernovits (two), and Simferopolya (one).

Scientific meetings have been held in seven divisions and eight groups of the Society. In the remaining seven groups there were no scientific meetings, due to the small number of members. In addition, scientific meetings were held in sections of the Society, of which there were five in Kiev: dendrology and acclimatization of plants, physiology of plants, flora and vegetation, and mycology. In Khar'kov there are sections working on the problems of mycology, phytopathology, and immunity of plants.

During the course of three years, 292 meetings were held in the divisions, groups, and sections of the Society, and at which 383 scientific reports were given. The subjects of the reports were

varied. In particular, reports were given on the study of flora and vegetation, plant resources, physiology of plants, anatomy, cytology, and embryology, increasing the agricultural productivity, and also reports dealing with the history of botanical researches.

After the first UBO conference was held in 1957, ten general meetings were convened, at which 16 scientific reports were presented, along with 14 informational reports. On 23 May, a grand meeting was held commemorating the 250th anniversary of the birth of the Swedish naturalist K. Linney in conjunction with the Ukrainian Committee for Defending the Peace, the Academy of Sciences Ukrainian SSR, and the Ukrainian Society for International Cultural Relations. After an introductory speech by the President of the Academy of Sciences Ukrainian SSR, A. V. Palladin, a report was given by D. K. Zerov titled, "Karl Linney -- an Eminent Swedish Naturalist." On 23 September, at a meeting commemorating the 75th birthday of the outstanding Ukrainian teacher, N. G. Kholodniy, a report was given by N. A. Lyubinskiy on "The Work of N. G. Kholodniy on the Physiology and Ecology of Plants," and by L. I. Rubenchik on "The Work of N. G. Kholodniy on Microbiology." On 11 December, at a combined meeting of the UBO, the Botany Institute of the Academy of Sciences Ukrainian SSR, and the Biology Faculty of the Kiev State University imeni T. G. Shevchenko, commemorating the 100th birthday of S. G. Navashin, reports were given by P. F. Oksiyuk on "The Life and Activity of S. G. Navashin," by D. K. Zerov on "The Works of S. G. Navashin on the Study of Cryptogamic Plants," and by Ya. S. Modilevskiy on "S. G. Navashin and Modern Embryology of Plants."

From 31 October to 1 November an anniversary session was held by the UBO and the Botanical Institute of the Academy of Sciences Ukrainian SSR, commemorating the 40th anniversary of the Great October Scialist Revolution, at which the following reports were presented: D. K. Zerov "Botanical Studies in the Ukraine during the Forty Years of Soviet Rule," K. Yu. Kostryukovaya "Some Theoretic Questions on the Chromosome Theory of Heredity," and S. F. Morochkovskiy "Rust Fungi in the Ukraine." On 20 December, at a combined anniversary meeting of the UBO and the Botanical Institute of the Academy of Sciences Ukrainian SSR commemorating the 40th anniversary of the Ukrainian SSR, reports were given by I. P. Belokon' on "The 40th Anniversary of the Ukrainian Soviet Socialist Republic and the Development of Botany," and by Ya. S. Modilivskiy on "Ontogenesis of Plants and the Theory of Phasic Development."

In 1958, nine general meetings were held, at which nine scientific and eight informational reports were presented. In particular, on 25 April a joint meeting between the UBO, the Ukrainian Division of the All-Union Chemical Society imeni D. I. Mendelyev, and the Kiev State University imeni T. G. Shevchenko, commemorating the 125th birthday of I. G. Borshchov, was held. At this meeting, reports were presented by D. K. Zerov and I. P. Belokon' on "The Life and Activity of I. G. Borshchov" and by A. V. Dumanskiy on "The Work

of I. G. Borshchov on Colloidal Chemistry."

On 27 November, a meeting was held by the Kharkov division commemorating the 165th anniversary of the birth of V. M. Chernyaev, at which reports were given by Yu. N. Prokudin on "The Life and Scientific Activity of V. M. Chernyaev" and by T. D. Strakhov on the "Mycological Studies of V. M. Chernyaev."

In 1959, eight meetings were held, at which nine scientific and two informational reports were given.

At a meeting on 14 January, D. K. Zerov gave a report on "The Character and Trend of Ukrainskiy Botanicheskiy Zhuranl (Ukrainian Botanical Journal). At a meeting held on 25 March of the same year, he also presented a report on "The Tasks of Botany in View of the Resolution of the 21st Congress of the CPSU". In 1959 this same problem was discussed in the majority of the sections and divisions of the Society.

On 9 December, a joint meeting was held between the UBO, the Botanical Institute of the Academy of Sciences Ukrainian SSR, and the Biology Faculty of Kiev University imeni T. G. Shevchenko, commemorating the 100th anniversary of the publication of "Origin of the Species by Ch. Darwin. Ye. N. Kondratyuk, K. M. Sitnik, I. P. Belokon', M. I. Kotov, and N. A. Lyubinskiy presented reports. Meetings commemorating Darwin were also held in Odessa, Chernovitsy, Uzhgorod, Cherkassy, and Zhitomir.

On 23 December, a combined meeting of the Ukrainian Botanical Society, Ukrainian Bio-chemical Society, and the Ukrainian Physiological Society imeni I. P. Pavlov, was held, commemorating the birthday of the outstanding Russian teacher who specialized in the physiology of plants, Academician Vladimir Ivanovich Palladin. M. F. Gulyy, A. S. Okanenko, and B. A. Rubin presented reports. His birthdate was also celebrated by a meeting of the Cherkassy division.

The L'vov division of the UBO, together with the L'vov State University imeni I. Franko, held a meeting from 2-6 June 1958 on the physiology and ecology of plant growth, at which 102 scientific reports were presented. The reports were published in a collected volume titled Rost Rasteniy (Plant Growth) (publishedby L'vov University, 1959, 495 pages). Teachers from the Ukrainian SSR and other republics in the Soviet Union took part in the conference, along with some from Bulgaria and Czechoslovakia. The conference participants were given two excursions into the Carpathians.

On 14 June 1958, the Dnepropetrovsk division of the Ukrainian Botanical Society, in conjunction with the Dnepropetrovsk State University imeni 300th Anniversary of the Reunion of the Ukraine and Russia, held a conference in Melitopol on the subject of forestry cultivation, after which an excursion was organized for the participants into the Staroberdyan forest of the Zaporozhskaya oblast. In August 1958, two botanical tourist excursions were made into Bulgaria and Czechoslovakia, which included Society members from seven Ukrainian cities (see note).

([Note:] Barbarich A. I., Belokon' I. P., Botanicheskie Ruristskie Ekskursii v Bolgariyu i Chekhoslovakiy (Botanical Tourist Excursions in Bulgaria and Czechoslovakia), Botanicheskiy Zhuranl (Botanical Journal), Vol XLIV, No 3, 1959, pages 419-421.)

The Ukrainian Botanical Society issues a publication called Shchorichnik Ukrains'kogo Botanichnogo Tovaristva, of which the first issue has just appeared. The Society has begun to receive botanical material from other organizations in exchange for Shchorichnik, and in this way the Society has begun to build up a library.

The members of the UBO have taken an active part in organization of wild life preservation in the Ukraine (they have participated in a project for forestry reservations to be established in the Ukrainian Forest and have published articles in newspapers, etc.).

The members of the Society have actively participated in domestic affairs, in particular, assisting Socialist agriculture, schools, and museums by giving lectures to the kolkhoz members, by making radio broadcasts, by writing articles for the press in oblasts and rayons, and also by making reports at various conferences. Thus for example, the members of the Uzhgorod Group of the UBO held a scientific meeting with kolkhoz members in the Tyachevskiy Rayon of Zakarpatskaya Oblast, in which they presented reports on improving natural meadowlands, growing vegetables, etc. (F. Ye. Rudenko, V. I. Komendar, A. A. Arsiriy).

The members of the Krivorozh and the Kremenets groups of the UBO have given methodological assistance to teachers, taking part in the work of methodological teaching conferences. Kiev botanists took part in discussions at a program on botany for a secondary school, along with an address by the Ministry of Education. Botanists from Kiev, Dnepropetrovsk, Odessa, Krivoy, Rog, and Belaya Tserkov' have given advice to workers in vegetable production. The Kremenets botanist V. A. Shimanskaya has assisted the Ternopol'skaya Oblast Regional Study Museum in setting up a natural science division.

Members in almost all sections, groups, and divisions of the UBO have given popular scientific lectures. In this connection, the Ukrainian Botanical Society has worked in conjunction with the Society for Dissemination of Scientific and Political Information in the Ukrainian SSR. However, the possibilities for further lecturing work are far from exhausted, and this area must be expanded.

The resolutions of the 21st Party Congress, of the Plenums of the Central Committee of the CPSU, and of the 21st Congress of the Ukrainian Communist Party have opened great prospects and possibilities for the Ukrainian Botanical Society.

B. A. Tikhomirov brought a salutation from the Soviet of the All-Union Botanical Society. He described the work of the Soviet of the All-Union Society and some of its branches, and praised the activity of the Ukrainian Botanical Society, such as the publication of the first issue of Shchorichnika Ukrains'kogo Botanichnogo Tovaristva.

He stressed the fact that such work as wild life preservation and dissemination of botanical information among the population must be developed further in the future.

Ten delegates then spoke, describing ways to further improve the work of the Society. After this, plenary meetings were held at which scientific reports were given.

A report by the Chairman of the Presidium of the Society, D. K. Zerov, given at the plenary meetings, was entitled "Tasks of the Ukrainian Botanical Society in Light of the Resolutions of the 21st Congress of the CPSU, the Plenums of the Central Committee of the CPSU, and the 21st Congress of the Ukrainian Communist Party." The following reports were also presented: M. V. Klokov (Kiev), "A Critical Study of Higher Flora in the Ukrainian SSR and Its Methodological Bases," A. L. Bel'gard (Dnepropetrovsk), "The Tasks of Forestry Cultivation"; K. Yu. Kostryukovaya (Kiev), "Michurinist Teaching in the Struggle with the Reactionary Theories of Heredity;" S. O. Grebinskiy (L'vov), "The Problem of Radio Stimulation of Plants": and D. A. Tikhomirov (Leningrad), "The Ninth International Botanical Congress in Canada."

From 1-2 March, meetings were held by the sections on flora and vegetation,,and the physiology of plants.

The following reports were given at the meetings on flora and vegetation: A. L. Lyp (Kiev), "Teaching a Course on Higher Plants in the Universities and Pedagogical Institutes in Conformity with the Ruling on Combining Academic Work with Practice;" I. I. Pogrebnyak (Odessa), "The Genesis of Flora in the Estuaries of the Northern Pricherno Sea;" Z. N. Gorokhovaya (Chernovits), "Some Changes in the Pine Forests of Stankevich near Sudak in the Crimea;" Z. K. Kostevich (Chernovits), "Phenological Phases in the Most Valuable Exotic Plants of the Chernovitskaya Oblast;" I. S. Sidoruk (Cherkass), Causes of Geobotanical and Natural Division into Rayons;" V. I. Komendar (Uzhgorod), "New Data on the Classification and Growth of Brushwood Groupings in the Carpathian Mountains of the Ukraine;" I. V. Artemchuk (Chernovits), "Characteristics of the Vegetation in the Foothills of the Bukovinka Mountains;" Yu. N. Prokudin and L. M. Slyusarenko (Khar'kov), "The Question of Grasses Taking Root under New Conditions;" M. G. Alekseenko (Khar'kov); "Resistance of Wheat to Darnels;" and M. P. Potul'nitskiy (Cherkass), "Soil Algae in the Vicinity of Cherkassy."

Twenty-one delegates held discussions on the reports given in the flora and vegetation meetings.

The following reports were given in meetings held by the section on plant physiology; F. F. Matskov and S. G. Manzyuk (Khar; kov), "The Role of Physiologically Active Systems in Corn Heterosis;" Yu. V. Solodovnik (Cherkassy), "Frostproof Pears for the Central Rayons of the Forest Steppe Zone of the Ukrainian SSR, located in the Dneper Basin"; V. T. Suborov (Odessa), "Causes of the Special Characteristics of Vegetative Hybrids;" N. N. Ovchinnikov and N. M.

Shikhanovaya (Odessa), "Ear Formation in Spikes of Wheat and Rye;" A. L. Baranov (Zhitomir), "Introductory Work of the Zhitomir Agricultural Institute's Botanical Garden;" Yu. A. Pervovaya (Khar'kov) "Anatomical-Microscopic Studies of the Vegetative Organs of Thalictrum minus L. and Th. flavum L'; A. I. Demnaya (Odessa), "Morphological-Anatomical Study of Santonic Wormwood;" and P. Ya. Vilenok (Kherson), "Effect of Nitrogen and Phosphorus on the Development of Winter Wheat."

Seven participants took part in discussions on the reports given in the meetings on physiology.

After a discussion of the scientific reports which had been given, resolutions were passed at the plenary meeting of the conference on 2 March.

After the work of the Society was described, certain defects were noted in the resolutions of the Second Conference of the Ukrainian Botanical Society, among which were: a) during the period under review, not one conference was called to handle problems; b) divisions or groups of the Society were not organized in all oblast centers; and c) joint exchange of information between the divisions and groups of the Society was not adequate.

The following resolutions were passed at the Conference:

1. To consider the work of the Board and Presidium of the Ukrainian Botanical Society during the period under review as satisfactory.

2. To approve the conclusions set forth in the report given by the Chairman of the Presidium Society, Academician D. K. Zerov, titled "Tasks of the Ukrainian Botanical Society in Fulfilling the Resolutions of the 21st Congress of the CPSU, the Plenums of the Central Committee of the CPSU, and the 21st Congress of the Ukrainian Communist Party", and to see that the new Board and Presidium, all divisions and groups, and also all members of the Society carry out these conclusions in their scientific and practical work.

3. To ascertain that the newly-selected Board and Presidium of the Society Continue the work of organizing new groups and divisions.

4. To increase membership in the Society of botanists, specialists in mixed disciplines, agronomists, teachers, and to increase the participation as corresponding members of students in institutions of higher learning.

5. To publish regularly Shchorichnika Ukrains'kogo Botanichnogo Tovaristva, seeing that synopses of reports presented at meetings of divisions, groups, and sections are also published in it systematically.

6. To direct the attention of botanists toward wild life preservation and to be more persistent in arousing the interest of oblast and republic soviet organs in the necessity of preserving important botanical areas.

7. To see that conferences are held to deal with the most important problems of botany.

8. To encourage participation in division meetings of botany students from secondary schools and institutions of higher learning.

9. To disseminate more widely botanical information and scientific-atheistic propaganda among the population, in particular among the rural rayons, combining this work with the work of the local groups of the Society for disseminating political and scientific knowledge.

10. To take the necessary measures for improving the training of young scientific cadres in the various fields of botany. To place particular emphasis on training cadres in the field of flora, it would be necessary to:

a) Bring the attention of the Ministry of Special Higher and Secondary Education and the Presidium of the Academy of Sciences Ukrainian SSR to the problem of offering post-graduate courses in the universities and scientific research institutes in all the main fields of botany; and

b) Present more often the reports of young botanists at meetings of the Society's divisions and groups. Cooperate with young botanists in preparing their candidate's dissertations.

11. Continue to emphasis the theoretic training of youth, particularly in botany, while encouraging further polytechnical training in institutions of higher learning.

12. Request the editorial board of Ukrainks'kogo Botanichnogo Zhurnaly (Ukrainian Botanical Journal) to throw light upon the botanical activities of institutions of higher learning in the pages of the journal.

13. Organize closer interchange of information between the divisions and groups of the Society. Require that the divisions and groups send plans for their work not only to the Board of the Society (in Kiev), but also to all other divisions and groups.

14. To exchange lecturers on important botanical problems

between the divisions and groups of the Society, particularly the lecturing of highly-qualified men presenting scientific reports to groups with a small number of botanists.

15. To take measures to improve the financial activities of the Society, such as making a request to the Presidium of the USSR Academy of Sciences for a subsidy.

16. Compel the divisions and groups of the Society to give a complete account of all work carried out by Society members.

17. Strengthen the bonds between the Society and its divisions.

18. Strengthen the international bonds between Ukrainian botanists and botanists from foreign countries, particularly people's democracies.

Officers of the Society were elected by ballot for the Board and the Presidium of the Ukrainian Botanical Society.

The Board of the Ukrainian Botanical Society was elected as follows: I. S. Amelin (L'vov), A. L. Bel'gard (Dnepropetrovsk), O. L. Baranovskiy (Zhitomir), A. I. Barbarich (Kiev), I. P. Belokon' (Kiev), G. I. Bilyk (Kiev), S. M. Bugay (Uman'), Ye. D. Visyulina (Kiev), D. K. Zerov (Kiev), V. P. Zosimovich (Kiev), M. V. Klokov (Kiev), Ye. N. Kondratyuk (Kiev), K. Yu. Kostryukova (Kiev), M. I. Kotov (Kiev), A. S. Lazarenko (L'vov), S. I. Lebedev (Kiev), A. L. Lypa (Kiev), N. A. Lyubinskiy (Kiev), F. F. Matskov (Khar'kov), Ya. S. Modilevskiy (Kiev), G. Kh. Molotkovskiy (Chernovitsy), G. M. Mordvintseva (Kiev), S. F. Morochkovskiy (Kiev), S. A. Mulyarchuk (Nezhin), N. N. Ovchinnikov (Odessa), A. S. Okanenko (Kiev), A. N. Oksner (Kiev), V. V. Osychnyuk (Kiev), N. N. Pidoplichko (Kiev), I. I. Pogrebnyak)Odessa), Yu. N. Prokudin (Khar'kov), D. F. Protsenko (Kiev), Ya. V. Roll (Kiev), N. I. Rubtsov (Nikitskiy Botanical Garden), F. Ye. Rudenko (Uzhgorod), I. S. Sidoruk (Cherkassy), T. D. Strakhov (Khar'kov), A. S. Tabentskiy (Belaya Tserkov'), I. M. Tolmachev (Kiev), Ye. G. Sud'ina (Kiev), A. V. Topachevskiy (Kiev), S. S. Kharkevich (Kiev), and M. S. Shalyt (Simferopol').

The following were chosen as members of the Presidium of the Ukrainian Botanical Society: A. I. Barbarich, A. L. Bel'gard, I. P. Belokon', G. I. Bilyk, D. K. Zerov, Ye. N. Kondratyuk, K. Yu. Kostryukova, M. I. Kotov, A. S. Lazarenko, A. L. Lypa, G. Kh. Molotkovskiy, G. M. Mordvintseva, A. N. Oksner, V. V. Osychnyuk, N. N. Pidoplichko, I. I. Pogrebnyak, Yu. N. Produdin, D. F. Protsenko, Ya. V. Roll, I. S. Sidoruk, T. D. Strakhov (deceased), Ya. G. Sud'ina and A. V. Topachevskiy.

The following were elected as members of the Auditing Commission of the Ukrainian Botanical Society: I. V. Artemchuk (Cher-

novitsy), M. A. Al'bitskaya (Dnepropetrovsk), M. M. Krutsekevich (Kamenents-Podol'skiy), P. F. Oksiyuk (Kiev) (deceased), V. A. Povarnitsyn (Kiev) N. N. Prakhov (Kiev, and V. I. Chopik (Kiev.)

The Chairman of the Presidium of the Society, D. K. Zerov, gave a concluding speech after the officers of the Ukrainian Botanical Society had been elected.

At the first meeting of the UBO Board, the following were elected: Chairman -- D. K. Zerov; Deputy Chairman -- I. P. Belokon' and Yu. N. Prokudin; Secretaries -- A. I. Barbarich and V. V. Osychnyuk; Treasurer -- G. M. Mordvintseva; and Libarian -- Ye. G. Sud-ina. The Auditing Commission of the UBO selected V. A. Pvarnitsin as Chairman, and V. I. Chopik as Secretary.

The Second Conference of the UBO expressed its confidence in the fact that the members of the Ukrainian Botanical Society would work even harder in the future to solve the important botanical problems, combining their scientific work with actual practice. In accordance with the resolutions of the 21st Congress of the CPSU, the Plenum of the Central Committee of the CPSU, and the 21st Congress of the Ukrainian Communist Party, Ukrainian botanists will make their contribution to the task of building Communism in our country.

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